

COVID-19 in Liver Transplant Recipients – Preliminary Experience of a Bulgarian Center

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Abstract

Introduction: There are still debatable facts about estimating the risk and severity of coronavirus disease (COVID-19) in liver transplant recipients, as well as assessing the impact of the immunosuppressive therapy on the clinical course and incidence of liver failure.

Material and methods: We present a prospective study of liver transplant recipients with severe acute respiratory syndrome coronavirus (SARS-CoV-2) infection admitted for treatment to the department of First Clinic of Abdominal Surgery, Military Medical Academy, Sofia during 25.11.2020 – 04.01.2021. The diagnosis is confirmed by a positive reverse transcription polymerase chain reaction (RT-PCR) test for SARS-CoV-2 infection from a naso-pharyngeal swab. COVID-19 severity is estimated as mild (oxygen saturation (SpO₂) ≥ 94% on room air and no imaging findings of pneumonia), moderate (SpO₂<94%, imaging suggestive of pneumonia), and severe (need for high flow oxygen supplementation).

Results: Three liver transplant recipients with COVID-19 were admitted and treated in our department during 25.11.2020 – 04.01.2021. All of them were male, mean age of 51.33 years (47 – 59) and their liver transplantations were performed 13, 5, and 1.5 years before. In each of the three patients a different clinical form of the disease was registered – mild (n=1), moderate (n=1), and severe (n=1). Only the patient with severe disease had comorbidities - hypertension, diabetes, and obesity. The patients with mild and moderate disease received dual immunosuppressive therapy with tacrolimus and mycophenolate mofetil while the one with severe disease - tacrolimus only. A dose reduction of tacrolimus was undertaken following serum level evaluation without changing the dose of the mycophenolate mofetil for those on dual therapy. The patient with severe disease died from respiratory failure leading to a case fatality rate of 33.3%.

Conclusion: Early diagnosis and hospitalization where possible are essential for the prompt initiation of treatment, prevention of complications and development of severe forms of COVID-19 in liver transplant recipients, especially in patients with comorbidities such as hypertension, diabetes, and obesity. During the course of treatment there may be a dose reduction of the immunosuppressive therapy but not discontinuation, especially of the calcineurin inhibitor in mono- or dual-therapy regimens.

Key words: COVID-19, liver transplantation